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ABSTRACT

The purpose of the Bilingual Program for physically handicapped children was to provide a learning environment in which handicapped children who do not speak English or who speak with difficulty would be able to function in their native language. Emphasis was placed on the children improving their native language along with learning English as a second language. Emphasis was placed also on improving the student's self-understanding and self image through demonstrating the worth and value of the use of his native language, and by providing instruction in Hispanic history and culture. In addition to the instructional component, the project incorporated three other components: curriculum and materials development, teacher training, and parental involvement. To evaluate the effectiveness of the program, pre- and post tests were administered to the students. It was found that 78% per cent of the pupils showed some progress in reading, 74 per cent improved their self-image, and 85 per cent of the pupils improved their knowledge of Hispanic culture. (Author/JM)

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ED137448

EVALUATION REPORT

B/E #09-57605

Title VII

BILINGUAL PROGRAM FOR PHYSICALLY HANDICAPPED CHILDREN

(School Year 1974 - 1975)

Victor D. Sanua, Ph.D.

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Title VII : An evaluation of a New York City School District Educational Project funded under Title VII of the Elementary and Secondary Education Act of 1965 (PL 89-10), performed for the Board of Education of the City of New York for the 1974-1975 school year.

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Chapter I

INTRODUCTION AND BRIEF PROGRAM DESCRIPTION

A. Introduction

The Bilingual Program for Physically Handicapped Children is a Title VII program which was funded by the United States Office of Education (Bilingual Education) for the amount of $144,072., and operated from September, 1974 to June 26, 1975. It was supervised by Mrs. Dina Ehrlich, of the Bureau for the Education of the Physically Handicapped of the New York City Board of Education. The Director is Mr. Marcus S. Arnold. The teacher assigned as Coordinator of the Program is Miss Suzanne Plave. Other staff members include four bilingual teachers, one educational assistant, one family assistant, and a senior clerk.

District 13, 14, and 15 include multi-cultural, multi-ethnic populations, but black residents and Spanish-speaking residents are the larger groups. There is a total of 323 physically handicapped children attending public school in the aforementioned districts. Approximately 40 per cent of these (130 students) are of Hispanic background. It is estimated that approximately 30 per cent of these 130 children speak little or no English and need a bilingual, bicultural program. A considerable number of them are two to four years behind in reading and mathematics.

It was the purpose of the project to provide bilingual instruction to children of Hispanic background who are moderately or severely physically handicapped or brain-injured. Besides their physical handicap, they are further disadvantaged by language, and cultural and emotional deprivation, which has resulted in severe learning disabilities in reading and arithmetic. Children who have been assisted in the program are in elementary grades 1-6 and junior high school grades 7-9 in Health Conservation classes.

B. Brief Program Description

The purpose of the Bilingual Program for Physically Handicapped Children was to provide a learning environment in which children who do not speak English, or who speak with difficulty, would be able to function in their native language, thereby enhancing their opportunity and ability to develop and acquire the skills and concepts which they need for normal academic progression and success. Emphasis was placed on the children expanding and strengthening their native language along with the acquisition of skills in English as a second language. Thus, the bilingual child received help toward using both his native language and English. Emphasis was placed also on the development of self-understanding and positive self image. This was achieved by demonstrating the worth and value of his home language through acceptance and usage, and by providing instruction in Hispanic history and culture.

In addition to the instructional component, the project was to incorporate three other components : curriculum and material development, teacher training, and parental involvement. One of the major needs of these children in the classes for physically handicapped in District 13, 14, and 15 as expressed by supervisors, teachers and diversified student population was a bilingual program that would focus on history and culture of the islands in the Caribbean, with particular emphasis on Hispanic culture.

To evaluate the effectiveness of the program, a number of standardized and non-standardized scales were administered by the teachers. Post-tests were administered towards the end of May and the beginning of June. The pre-tests were administered in February, 1975. The standardized tests which were administered included Tests General Ability, and Tests of Reading of the Interamerican Series , published by Guidance Testing Associates of Austin, Texas. Other scales used included the Self- Appraisal Scale and the Achievement

Attitudes Test which were both devised by Davidson and Greenberg. Rating Scales of the Physically Handicapped, which measure pupil's ability to speak English, were administered by the Bureau for the Education of the Physically Handicapped. In addition, a Culture Test devised by N. Henry and R. Cora, both bilingual teachers in the Program, was also administered.

C. Objectives of the Program

The original Program objectives as stated in the design application, B/E #09-57605, were as follows: (See Note at end of this Report, Appendix A).

1. At least 80 per cent of the students in the program will possess significantly more concepts and readiness skills in the first language (Spanish), and 75 per cent will improve in their second language ability (English) than they did at the start of the program.
2. At least 75 per cent of the students will be reading on grade level in their native language as revealed by their performance on the Interamerican Tests.
3. At least 75 per cent of the students will demonstrate positive gains in self attitude as revealed by the Michigan State University Self Concept Scale.
4. At least 75 per cent will improve one rating step as revealed by the survey conducted by the Bureau of Physically Handicapped Children for the New York City Board of Education.
5. At least 75 per cent of the students in grades 1-6 and 7-9 will demonstrate knowledge of culture as revealed on assessments of test prepared by curriculum specialists, and most students will demonstrate improved attitudes toward school as revealed by teachers questionnaires.

D. Implementation of the Program

Bilingual teachers, speaking fluent Spanish, were employed in the Fall of 1974, and after approximately four weeks of orientation by specialists at the Board of Education, were assigned. They were given lectures and demonstrations by teachers of Special Education, and other bilingual teachers. They were taught how to teach reading and arithmetic to those who have perceptual and motor difficulties. Bilingual teachers were assigned to at least two schools, and some had three schools, depending on the number of Spanish-speaking pupils in the school. These teachers provided individual tutoring to the pupils, who were rotated out of their regular classes. They usually worked in a room which was specifically assigned for this purpose. However, at times, tutoring work was done in the regular classroom. Children were seen two to three times a week. The language of instruction was generally English, but whenever necessary Spanish was spoken.

Chapter II

EVALUATIVE PROCEDURE

The evaluation objectives, as spelled out in the design, were as follows :

1. To determine the percentage of students who have significantly improved in concepts and readiness skills in the first language, and the second language.

   1.1 Subjects : All participants.

   1.2 Procedures : The program coordinator will administer instruments selected on a pre/post-test basis as measures of concepts and readiness skills in the first language, and another set of instruments to measure improvement in the second language.

   1.3 Data Analysis : Correlated t tests between pretest and post-test raw scores will be run to determine statistical significance for the percentage of students who improved as indicated by post-test scores.

2. To determine the percentage of students who will be reading on grade level in their native language.

   2.1 Subjects : All participants.

   2.2 Procedure : The program coordinator will administer the Interamerican Tests to the target population on a pre-post-test basis, as a measure of the objective.

   2.3 Data Analysis : See 1.3 above.

3. To determine the percentage of students who have demonstrated positive gains in self-attitude.

   3.1 Subjects : All participants.

   3.2 Procedure : The program coordinator will administer the Michigan State University Self Concept Scale on a pre-post-test basis.

   3.3 Data Analysis : Pretest and Post-test scores will be tabulated and presented

3.3 to determine how many students improved in self-attitude, and by how much to ascertain if the criterion of the objective has been met.

4. To determine the percentage of students who have improved one rating step as revealed by a survey conducted by the Bureau of Physically Handicapped Children for the New York City Board of Education.

4.1 Subjects : All participants.

4.2 Procedure : A rating scale will be used on a pre-post survey by the aforementioned Bureau.

4.3 Data Analysis : Pre- and post- rating data will be tabulated and presented to determine the percentage of students who improve by one scale rating as a measure of the criterion of the objective.

5. To determine the percentage of students who have demonstrated knowledge of culture, and the percentage of students who have demonstrated improved attitudes towards school.

5.1 Subjects : Students in grades 1-6 and 7-9.

5.2 Procedure : Cultural Knowledge will be measured by pre-post-test assessments using instruments developed by curriculum specialists. Improved attitudes towards school will be measured by a teachers questionnaire developed by the program coordinator. This questionnaire will be administered on a "post-test" basis only, and involve teachers' observations and perceptions of students over the academic year.

5.3 Data Analysis : Pre-post raw assessment scores will be tabulated and presented to indicate the degree of measured improvement in culture knowledge. Teacher questionnaire responses will be analyzed qualitatively.

A. Sample: Twelve schools were involved in this project. The following lists the number of children to be found in the various schools, as indicated in the research design. We also include the number of non-Hispanic Children attending the same health conservation classes.

School	Bilingual Teacher	Hispanic Students	Non-Hispanic Students	Total No. of Students
* P.S. 11	Janet Heller	35	23	58
P.S. 270	Lenore Cohen	2	16	18
P.S. 265	Neil Henry	1	5	6
* P.S. 16	Janet Heller, Rosemary Cora	5	14	19
* P.S. 17	Carolyn Small Rosemary Cora	10	9	19
P.S. 168	Carolyn Small	11	25	36
* P.S. 297	Neil Henry, Rosemary Cora	15	15	30
* P.S. 126	Lenore Cohen, Rosemary Cora, Lois Pupps, Suzanne Plave	10	15	25
P.S. 131	Neil Henry	10	21	31
P.S. 321	Rosemary Cora, Lois Pupps, Suzanne Plave	17	12	29
* P.S. 88	Suzanne Plave, Lois Pupps	7	24	31
* P.S. 293	Lenore Cohen, Rosemary Cora	6	9	15
	Totals:	129	188	317

* These schools were visited by the evaluator. (P.S. 307 was included in the original design but no teacher was assigned to that school because it had only one Spanish pupil.)

Bilingual teachers provide individual instruction to pupils. The pupils are usually taken out of their regular class, and tutored for one period. It is only at P.S. 297 that the bilingual teacher at times holds groups, besides individual tutoring.

B. Description of Schools Visited

The following is a description of the various health conservation classes which were in the schools visited :

1. P.S. 11. This school has the largest unit of health classes in the borough of Brooklyn. A total of six classes was visited. One class was for the severely multiple-handicapped child, where all of the children were in wheelchairs. Another class was for children of kindergarten age and first graders, one class for second and third graders, another class for fourth, fifth, and sixth graders. There were two other classes for children with non-observable handicaps such as asthma, heart disease, etc. Each class has ten children registered, but because of absences not all the children were present.

2. P.S. 297. At P.S. 297 there are 22 bilingual children who are physically handicapped, mostly asthmatic and orthopedically handicapped. They have a health conservation class for brain-damaged children. The bilingual teacher sees the children in small groups twice or three times a week. He reserves one afternoon a week for individual tutoring to help those children who have difficulties learning within a group setting. Once a week the bilingual teacher provides a cultural lesson to the entire class of physically handicapped children. The purpose is to develop mutual acceptance and interest in each other's ethnic background.

3. I.S. 88 : This school is in a neighborhood which is predominantly Puerto Rican. The bilingual program serves thirteen Spanish-speaking children. Four are physically handicapped (mostly asthmatic and heart disease), and two are brain-damaged. At this school, the bilingual teacher received the help of the educational assistant, who was present during the teaching sessions.

4. I.S. 126 : I.S. 126 is a junior high school which has two health conservation classes, one for the physically handicapped, and one for the brain damaged. The bilingual teacher tutors ten physically handicapped children, and three or four in the brain-damaged health class. The bilingual teacher also tutors at P.S. 293, where she has eight children, and at P.S. 270, where she has two children to tutor.

5. P.S. 17 : The bilingual teacher spends three days a week at P.S. 17 and two days at P.S. 168. Her load at P.S. 17 is seventeen children, and at P.S. 168, seven children, for a total of twent-four children altogether. There are two health conservation classes at P.S. 17, nine bilingual pupils in grades 1-3, and eight bilingual pupils in grades 3-4-5 . A larger percentage seem to be asthmatic. The bilingual teacher works in the corner of a large health conservation classroom and she is surrounded by bookshelves. She selects the children and works with them for one period of time, while the others are receiving regular instruction.

6. P.S. 16 : P.S. 16 is an elementary school in Williamsburg. The population surrounding the school is Puerto Rican and Hassidic Jewish. Howeve

the majority of the pupils are Puerto Rican. The school has three classes of HC-3 children (brain damaged.) All these children are under medication because they tend to be hyperactive. The bilingual teacher was working in a special classroom, which was not used by other personnel.

7. P.S. 293: P.S. 293 has two classes for brain-damaged pupils. Eight of these pupils are Spanish-speaking. The individual teaching was done in an industrial arts workshop.

C. Tests Used

1. Interamerican Tests of General Ability and Reading

The Interamerican Tests had their origin in tests developed by the Committee on Modern languages of the American Council of Education for use in a study of the teaching of English in Puerto Rico. After some revision, the materials were published in 1950 by the Educational Testing Service for general use under the title Co-operative Interamerican Tests. As the name, Interamerican suggests, it was the hope of the Committee on Modern Languages that the tests would be useful in different countries of the Western Hemisphere. In 1959 the publication of the tests was transferred by E.T.S. to Guidance Testing Associates, in Austin, Texas.

Under the direction of Professor Herschel T. Manuel at the University of Texas, a new series of Interamerican Tests were published in 1963-1966. Those tests are both in English and Spanish. The comparability of the English and Spanish editions is the unique contribution of the Interamerican Series of tests, an important asset in a variety of situations. Children could be tested

either in their native language or in English. The tests thus provide a basis for comparing the abilities of the same person in the two languages. In this project, the tests were administered in Spanish only; pre-tests beginning February, 1975, and post-testing in mid-June, 1975.

(a.) Tests of General Ability of the Interamerican Series

Those tests in the Series which are designed to provide an estimate of the ability of the pupil to do academic work in general are called Tests of General Ability. (The vocabulary and simple numerical items yield a Verbal-Numerical subscore at the pre-school level, the primary level, and level two.) Exercises requiring the recognition of relationships (Associations and Classifications) presented by drawings, yield a Non-Verbal Subscore. All are combined in a Total Score. For the purpose of this research, only a combined verbal and numerical subscore was used.

At levels three to five the subtests consist of exercise in three general areas--Verbal (sentence completions and word relations); Non-Verbal (analogies and classifications); and Numerical (computations and number series). All yield a Total Score.

The tests are too limited to tap the many abilities which should be summarized to provide an adequate measure of general intelligence.

Many of the children tested in the project would not perform according to norms, particularly that they come from disadvantaged homes where Spanish tends to be the dominant language, or from bilingual homes. The second disadvantage is that they are physically handicapped and therefore their condition prevents normal schooling; their general ability is then expected to be lower than the norms. With brain-damaged

children, achievement scores are expected to be even lower.

(b.) Tests of Reading in the Interamerican Series

The tests of Reading in the Interamerican Series are designed to measure both vocabulary and comprehension, and provide a total score. The child chooses a picture suggested by a word, phrase, or paragraph. At levels above grade one, Comprehension is measured by two subtests, Speed of Comprehension and Level of Comprehension, besides a vocabulary test, and a total score of the three scales.

All the above tests were administered in the Spanish language. Quite a large number of children were unable to read in Spanish, despite the fact that this was their mother-language. This is understandable, since it was probably their first experience at trying to read Spanish.

2. Other Tests Administered

There were two attitude scales which were administered to the pupils: a scale to measure self-concept, The Self-Appraisal Scale, and another scale which measures attitude towards achievement, the Achievement Attitudes Test. Both these scales were devised by Davidson and Greenberg (1967) and taken from a report entitled School Achievers From a Deprived Background (City College, City University of New York), a research supported by the Office of Education of the U.S. Department of Health, Education, and Welfare.

(a.) Self-Appraisal Scale (See appendix B)

A list of twenty-four items to be rated on a three point scale was developed to measure the child's appraisal of himself. Emphasis was

placed upon learning behavior; for example, "Smart in school", "trying my best," "lazy". In addition, personal and interpersonal qualities were tapped, such as "shy,""liked by other children". This instument was modeled after one that had been used successfully in another study situation (Davidson and Greenberg). The scale was individually administered. The split-half reliability of the test is .77. A value of 3 was given when the answer was "most of the time", 2 for "about half the time", 1 for "hardly ever" for the positive items. The scoring was reversed for the negative items. The maximum score is 72. The scale has been factor analyzed and 4 factors were derived:

1. Personal competence
2. Academic competence
3. Social competence
4. Nonintellective Competence

Definite differences were found in the first 3 factors between high achievers and low achievers (girls--high, 60.3; low, 55.6; boys--high, 55.6; low, 55.2). High and low achievers rated themselves similarly on non-intellective activities. Thus it would appear that school can nurture positive self-image through success in learning experiences.

It is to be noted that in the original design of the project, the plan was to use the Michigan State University self-concept scale. Such a scale was not available when requested by the coordinator.

(b.) Achievement Attitude Test (See Appendix C)

In order to obtain some direct expressions of the child's values related to school learning, a forced-choice instrument on achievement was added to the battery. This was not included in the proposed battery,

but it was felt that it would be useful to have an instrument that reflected direct academic interest and concern, and responsibility for completing work on time and delayed gratification. The test was substituted for the demonstration of improved attitudes toward the school, as revealed by teachers' questionnaires. It was thought preferable to use a closely associated scale that had been used, rather than devise a new one with all the problems of reliability and validity.

Here again, there were differences between the high and low achievers on five factors out of seven : academic effort, academic interest, curiosity behavior responsibility for learning, and anxious striving.

Each of the 24 items was scored 1 or 0 , indicating the more positive achievement attitude,. For example, preference for academic activities rather than play, willingness to delay gratification, assumption of responsibility for academic failure or success. The split half reliability of the test was .56

(c.) Knowledge of Culture

This scale was devised by N. Henry and R. Cora, both bilingual teachers in the program. The scale consists of 34 True-False items pertaining to the Spanish language, Caribbean life, a few items about Africa, and general questions pertaining to minority groups. Fifteen more questions are multiple-choice in the same area as above. The score on the scale is the number of correct answers. It is multiplied by 2 so as to make the maximum score 100.

All of the above scales were administered by the bilingual teachers to the pupils.

D. Modifications Introduced

Another discrepancy to be noted between the original plan and the actual testing was that the rating scale of pupil ability to speak English , the first Aspira Test , was not used as a post-test. The scale itself is extremely subjective. The oral proficiency of children is evaluated by asking them a number of questions based on a few pictures and the teacher rates the student on a scale of 1 to 5 on vocabulary and sentence structure. The ratings are doubled and added to the ratings of 1 to 5 for pronunciation and intonation. Further, since there is no alternate form for this scale, its validity is reduced, because of the memory factor. We understand that the Board of Education has now been using a new Aspira Test to examine pupils' understanding of the English language.

Because of the short span between the two testing periods, it was not expected that changes would be as great as if the time elapsed between the pre- and post- test had been approximately 9 to 10 months, or one year of schooling.

E. Limitations of the Study

Because of the nature of the population, with many absences during the testing period owing to illness, visits to the doctor, bad weather, etc., it was not possible to obtain scores on 130 children in the program. Furthermore, a number of children moved out of the program area, or transferred during the period of the study. Also, newcomers registered later in the year, and therefore could not be included in the population study. This is why the total number of pupils for each scale are different. We included in our statistical analysis only those students who received a pre-test and a post-test.

Chapter III

RESULTS

One of the program objectives was to determine the percentage of students who obtained improved scores from the pre-test to the post-test, on the scales administered. A second set of calculations called for by the evaluation objectives pertained to the significance of the mean differences between the two sets of mean scores. Since the same individual was tested twice, it was necessary to use t-tests for correlated means between the pre-test and post-test scores to determine if those differences were significant.

A. Percentages of Improvement

In Table I we present the percentage of pupils who improved upon their previous scores, together with the expected improvement as spelled out in the evaluation objectives of the original application :

TABLE I. Expected and Found Percentages of Improvement between the Pre-Test and Post-Test Scores of the Five Scales Administered

Scale	Number of Pupils	Expected Percentage	Found Percentage
General Ability	86	80 %	80 %
Reading of Spanish	73	- - - -	78 %
Knowledge of Culture	101	75 %	86 %
Self-Appraisal Scale	104	75 %	74 %
Attitudes towards Achievement	104	- - - -	57 %

From the foregoing table, it can be seen that the percentage of those who improved their scores on the General Ability Tests, Self-Appraisal Scale, and Knowledge of Culture tests are very close, or higher, to the expected rates as indicated in the evaluation objectives, which is an indication that the program has had some impact on the students.

However, the results on Reading of Spanish, and Attitudes towards Achievement requires some comment. When the pre-testing was conducted in Reading of Spanish , it was found that only 25 % of the pupils, when they were first tested in February, could achieve a scorable response on the reading, while 75 per cent of the pupils could not read Spanish at all. This is quite below the expectation that 75 per cent of the pupils could read at grade level in Spanish, as indicated in the evaluation objectives. This was certainly an over-estimate of the ability of these children to be able to read in their native language.

The 78 per cent improvement in reading, for 73 pupils, needs some interpretation Approximately half of this latter number, that is, 37 pupils, had no reading ability at all at the beginning of the testing in February. In the course of the four months they were tutored, some were still not able to score on the reading test. Some others were able to score a few points, and in a few cases, there were large increments in reading ability.

B. A Comparison of the Pre-Test and Post-Test Scores of the Five Scales

Objective No. 1 was to determine the percentage of students who have significantly improved in concepts and readiness skills in the first language, and the second language. Data analysis requires correlated t-test between pre-test and post-test scores For this objective of the evaluation, the Test of General Abilities , Level I and Level II of the Interamerican Series were administered in the Spanish language. (See Note regarding the objectives at end of report , Appendix A).

In Table II we present the mean scores of the pre-test and post-test achieved by the pupils in the Program, on the Tests of General Ability:

TABLE II. Achievement on the Tests of General Ability

Level I Test				Level II Test			
No.	Mean	S.D.	Correlated t-test	No.	Mean	S.D.	Correlated t-test
Pre-Test				Pre-Test			
58	24.53	7.60	4.39	28	40.50	7.15	4.57
Post-Test				Post-Test			
58	29.32	7.24		28	45.00	6.76	

Both t-test significant beyond the .01 level.

The pupils who were administered the Level I and Level II Tests of General Ability improved significantly between the two periods of testing. Thus, it would appear that the experiences of these pupils during the period of the program had increased their general ability in vocabulary and numbers in Spanish.

Objective 2 was to determine the percentage of students who will be reading on grade level in their native language. The program coordinator was to administer the Interamerican Tests to the target population, on a pre-test / post-test basis, as a measure of the objective.

In Table III we present the results on the Reading of Spanish test that were administered in February, and in June, 1975:

TABLE III . Reading of Spanish Test (Prueba de Lectura)

Level I Test				Level II Test			
	No.	Mean	S.D.	Correlated t-test	No.	Mean	S.D.	Correlated t-test
Pre-test	59	10.67	21.37	7.31*	14	34.14	30.90	1.62
Post-test	59	20.49	21.28		14	44.57	31.29	

* Significant beyond the .01 level

It is only in the case of the Level I reading scores that there was a significant improvement in the means. The difference for Level II reading scores was not found to be significant. The large standard deviation is explained on the basis that in the reading tests results there was a very wide range of scores, with quite a sizeable percentage scoring zero on the pre-test. Thus, the overall result is that the program had some significant effect on the reading ability of those who were administered the Level I reading test. While there was some improvement with the Level II reading test scores, the difference was not found to be significant.

Objective 3 was to determine the percentage of students who have demonstrated gains in self-attitude with the Michigan University Self-Concept Scale. As indicated earlier, since the Michigan University Self-Concept Scale was not available, the Self-Appraisal Scale was used, instead.

Table IV provides the mean scores on the pre-test and post-test on the Self-Appraisal Scale, which was administered in February and in June, 1975 :

TABLE IV. Self-Appraisal Scale

Testing Period	Number	Mean	S.D.	Correlated t-test
Pre-test	104	52.17	7.91	
				3.04*
Post-test	104	54.83	7.58	

* Significant beyond the .01 level

It would appear from the above means that the pupils improved significantly in their self-image, or demonstrated positive gains in self-attitudes during the period under study.

In the original study, by Greenberg and Davidson (1967), the high and low achievers were compared on the Self-Appraisal Scale. We shall give the mean here of the low achievers, and compare it with the mean scores which were obtained in the present study. Low achievers in the original study had a score of 55.6, which is somewhat higher than was obtained with the present group. This discrepancy is probably due to the fact that the sample in the original study included normal individuals only, whereas in the present study, the pupils are physically handicapped and many are non-readers, two conditions which would probably affect their self-image.

Objective No. 4 was to determine the percentage of students who have improved one rating step as revealed by a survey conducted by the Bureau for the Education of Physically Handicapped Children of the New York City Board of Education. Our understanding of the above objective is that it dealt with the Rating Scale of Pupils' Ability to Speak English which, as indicated earlier, is an extremely subjective scale. Therefore, it was felt there was little value in measuring differences in the ability to

speak English .

Objective No. 5 was to determine the percentage of students who have demonstrated Knowledge of Culture, and the percentage of students who have demonstrated improved Attitudes Towards Achievement.

Table V gives the mean scores on the pre-test and post-test administration of the Knowledge of Culture Scale :

TABLE V . Knowledge of Culture Scale

Testing Period	Number	Mean	S.D.	Correlated t-test
Pre-test	101	71.18	12.86	10.543*
Post-test	101	82.89	10.63	

* Significant beyond the .01 level

The above indicates there was a large improvement in Knowledge of Culture, when the pre-test and post-test means are compared. This was, by far, the largest increment in the battery of tests administered. Thus, in the process of tutoring, the pupils had become more familiar with their own culture and with black culture.

In Table VI the mean scores obtained by the pupils on the Attitudes towards Achievement are presented :

TABLE VI. Attitudes Towards Achievement Scale

Testing Period	Number	Mean	S.D.	Correlated t-test
Pre-test	104	15.02	3.78	3.795*
Post-test	104	16.34	3.12	

* Significant beyond the .01 level

As the above differences in mean scores were found to be significant, this indicates that by June the pupils were more favorably disposed towards the school than in February, when the scale was administered for the first time. As in the previous scale the sample is less well-disposed towards school than a normal sample. In the Davidson and Greenberg study (1967), using normal pupils, the mean score was about 19. Undoubtedly, in the present sample of physically handicapped children, school tends to be less attractive.

C. Evaluator's Comments

The evaluator made seven site visits, and observed the teachers tutoring the children. The staff was very well organized and used interesting techniques to motivate the pupils. One problem, however, is that working conditions were not ideal at times. Some teachers had their own classroom, while others worked in rooms where there were constant interruptions, and some children might have been distracted. The ideal of the program is for each child to receive personal attention, and the interaction between the pupils and teachers was rather pleasant to observe. It would seem that this individual attention contributed to the motivation for learning. Furthermore, the fact that the teacher was Spanish-speaking added a further, positive dimension to this interaction.

In a number of instances, some children appeared unable to concentrate, and some effort was made on the part of the bilingual teacher to ascertain if there was any problem.

During the Program, efforts were made to enlist parental interest in arranging for parent-teachers meetings , and coffee hours were held on a regular basis. A board of 20 parents has already been organized for next year. The bilingual teachers have been meeting at he Board of Education on a regular basis, in order to exchange ideas on their experiences, and help in the preparation of new material which could be used in the program.

Chapter IV

SUMMARY OF MAJOR FINDINGS , CONCLUSIONS, and RECOMMENDATIONS

During the 1974-1975 school year, approximately 130 children of Hispanic origin who were attending Health Conservation Classes for the Physically Handicapped in District 13, 14, and 15, received individual assistance in reading , wr iting, and arithmetic, both in English and in Spanish from bilingual teachers. The purpose was to enable these physically handicapped pupils to develop and enhance their abilities to acquire skills and concepts required for normal academic progress. The fact that Spanish was used at times as a language of interaction promoted such an aim. It was found that 80 per cent of the pupils had improved their scores on the Test of General Ability of the Interamerican Series , Level I and Level II . The difference between pre-tests and post-tests was found to be statistically significant. While only 25 per cent of the pupils could read Spanish when the reading scale was administered, it was found that many had acquired some ability to identify Spanish words, or improved their reading substantially by June, 1975. In general, 78 per cent of the pupils showed some progress in reading. The difference in means was significant only for Level I reading test. In Level II, the difference went in the expected direction, but it was not significant.

On the Self-Appraisal Scale, 74 per cent of the pupils improved their self-image, and the difference was found to be significant. On a test of Knowledge of Culture , 85 per cent of the pupils improved their score on the Scale, and the difference here was most significant. During the same period of time 57 per cent of the pupils improved their Attitudes toward School Achievement . Thus, it would appear that the bilingual program seems to have had some impact on a large percentage of the children, in spite of the short time between the two testing sessions. It is assumed the differences would have been greater

if it had been possible to administer the scales at the beginning of the school year, and at the end of the school year.

However, from the research point of view, we cannot say definitely that the improvement could be entirely attributed to the bilingual program, since there was no control group which did not receive any tutorials, with which to compare the pupils in the program. There is also another aspect, and that is that the same scales were administered before and after, rather than using alternate forms, and there is the possibility that the memory factor may have influenced the results.

Our general conclusion is that the program should be continued, since there seems to be a significant educational improvement, both academically and in general attitude towards self and the school, on the part of these physically handicapped pupils.

The following are some of our recommendations :

1.) In view of the fact that a number of children did not improve their scores, in spite of the tutorials, they should be tested to determine the reason for non-progress. Remedial action should be taken if need be, in order to help make the tutorial more efficient.

2.) Efforts should be made so that bilingual teachers conduct their tutorials in rooms specifically assigned to them for this purpose, where there would be few interruptions. Teaching in ante-rooms, or in rooms where there are other activities in progress cannot be conducive to doing concentrated work.

3.) Efforts should be made to select scales which have alternate forms, to control for the memory factor. Such scales should be carefully examined, and only those which are suitable for the population under study should be selected. Such tests should have proven validity and reliability.

4.) It is recommended that one person do the testing for all the children in the program, so as to assure a uniform administration of the scales. Thus, also, the teachers would be able to devote all their time to teaching the pupils.

5.) Since many of these children suffer from personality difficulties, because of their cultural background and deprivation, and their physical handicaps, a psychologist or guidance counselor should be added to the team, who would be responsible for dealing with the problems of the children, in condjunction with parental contacts. Such attention is bound to affect their learning and absorption of material. An anxious child is not an ideal subject to tutor.

REFERENCES

Davidson, H.H. and Greenberg, W. Judith, Traits of School Achievers from a Deprived Background, Office of Education, U.S. Departement of Health, Education and Welfare. The City College of the City University of New York, New York, 1967.

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APPENDIX A

Program objectives in a separate document followed by the teachers :

A. At least 80 per cent of the students in the program will possess significantly more concepts and readiness skills in the first language than they did at the start of the program.

B. At least 75 per cent of the students will be reading on grade level in their native language as revealed by their performance on the Interamerican Tests.

C. At least 75 per cent of the students will demonstrate positive gains in self-attitude as revealed by the Michigan State University Self-Concept Scale.

D. At least 75 per cent of the students will improve their second language ability.

At least 75 per cent will improve one rating step as revealed by the survey conducted by the Bureau of the Physically Handicapped Children for the New York City Board of Education.

E. At least 7 per cent of the students in grades 1-6 and 7-9 will demonstrate knowledge of culture as revealed on assessments of tests prepared by curriculum specialists and most students will demonstrate improved attitudes toward school as revealed by teachers questionnaires.

The above is different from the program objectives received by the evaluator. The above does not call for testing in readiness skills in the second language. In the above objectives, students must demonstrate improved attitudes towards school as revealed by teachers questionnaires.